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Indian Standard

AUTOMOTIVE VEHICLES — TRANSMISSION SYSTEMS — MANUAL CONTROL SEQUENCE IN AUTOMATIC TRANSMISSIONS — RECOMMENDATIONS

भारतीय मानक

स्वचल वाहन—संचरण प्रणाली—स्वचल संचरण के हस्त्य नियंत्रण अनुक्रम—सिफारिशें

UDC 629·113 : 621·83·069·2

DESCRIPTORS : AUTOMOTIVE VEHICLES — AUTOMATIC TRANSMISSIONS, MANUAL CONTROL SEQUENCE.
AUTOMOTIVE TRANSMISSION SYSTEMS — MANUAL CONTROL SEQUENCE FOR AUTOMATIC TRANSMISSIONS.

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NEW DELHI 110002

May 1989 **Price Group 1**

Automotive Transmission Systems Sectional Committee, EDC 103

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards on 29 September 1988, after the draft finalized by the Automotive Transmission Systems Sectional Committee had been approved by the Mechanical Engineering Division Council.

This standard is one of the series of standards on the basics of automotive transmission systems, the terminology used, the symbols on manual and automatic transmission systems, etc.

In view of proliferation of vehicles and recent collaborations in the field of passenger cars and light commercial vehicles, it is imperative that the sequence of manual change in automatic transmission be standardized so that the drivers do not have any confusion while driving the vehicles. It is also necessary, that these symbols and sequence should be aligned with the international standards and practices in this field. Accordingly, in the preparation of this standard, assistance has been derived from the following standards:

a) Federal Motor Vehicle Safety Standard — FMVSS 102 Transmission Shift Lever Sequence. National Highway Traffic Safety Administration, Department of Transportation, USA.

b) SAE J 915 Automatic Transmissions — Manual Control Sequence. Society of Automotive Engineers, Inc., USA.

AMENDMENT NO. 1 DECEMBER 2008
TO
IS 12460 : 1988 AUTOMOTIVE VEHICLES — TRANSMISSION SYSTEMS — MANUAL CONTROL SEQUENCE IN AUTOMATIC TRANSMISSIONS — RECOMMENDATIONS

(*Page* 1, *clause* 6, *Title*) — Substitute the following for the existing:

'6 PUSH BUTTON MANUAL CONTROL ARRANGEMENT'

(*Page* 1, *clause* **8.2**, *first sentence*) — Substitute the following for the existing:

'An inhibitor for reverse is to be compulsorily provided.'

(TED 2)

Reprography Unit, BIS, New Delhi, India

Indian Standard

AUTOMOTIVE VEHICLES—TRANSMISSION SYSTEMS—MANUAL CONTROL SEQUENCE IN AUTOMATIC TRANSMISSIONS—RECOMMENDATIONS

1 SCOPE

1.1 This standard recommends a standard pattern or sequence for the manual control of automatic transmission in passenger cars/light commercial vehicles.

2 APPLICABILITY

2.1 This recommendation pertains particularly to automatic transmissions of the hydrodynamic drive type. However, it could serve equally well for other types of drives such as mechanical, electrical or hydrostatic. It is primarily applicable to passenger cars and light commercial vehicles. If applicable, it could also be used on the other types of vehicles.

3 DESIGNATIONS OF AUTOMATIC TRANSMISSION POSITIONS

3.1 Various automatic transmission positions shall be designated as follows:

Position	Designation Symbol
PARKING	P
REVERSE	R
NEUTRAL	N
DRIVE	D

3.1.1 The designation symbol of forward positions from the DRIVE position to low geared position shall be as follows:

Position	Designation Symbol
LOW GEARED	L

4 STEERING COLUMN MOUNTED CONTROL LEVER

4.1 The general pattern or sequence shall be P R N D L (*see* **3**).

4.1.1 The parking position shall be located as shown above, if provided. However, inclusion of such a position is optional.

4.2 For detecting the position by feel and for safety, a stepped gate shall be provided so that the control lever has to be raised in a direction parallel to the axis of the steering column in order to engage certain of the manual positions. While a definite gating pattern is not specified, the preferred pattern is given in **4.2.1**.

4.2.1 N and D on one plane → raise to obtain either R or L → raise further to shift R to P (if parking position is provided), with P being a latched position.

5 FLOOR OR PANEL MOUNTED CONTROL LEVER

5.1 The general pattern or sequence shall be P R N D L. Adequate gating as specified for the steering column mounted lever (*see* **4.2**) shall be provided. A lever with a button release for entering Reverse, Parking and/or Low is a desirable feature. Parking shall be a latched position but its inclusion is optional.

6 BUSH BUTTON MANUAL CONTROL ARRANGEMENT

6.1 There is no preferred pattern. However, the recommendation is that the N and R buttons be well defined and separated from the buttons selecting forward speeds.

7 VARIATIONS

7.1 If differences such as dual driving range selection or the choice of specific ratios are provided, then these can fit into the recommended sequences. For example:

P R N $D_2 D_1$ L	P R N D 2 1
P R N DRIVE L	PARK R N D S L

8 INHIBITORS

8.1 For three speed automatic gear boxes, the inhibiting of a third to first shift is recommended above vehicle speeds which would cause engine overspeed and/or severe braking. No recommendation is made on a third to second inhibitor.

8.2 An inhibitor for reverse is recommended although it is considered optional. Either a mechanical or a hydraulic inhibiting is acceptable and recommended for all types of controls.

8.3 Engaging of the parking position (if included) is mechanically inhibited by means of the gating mentioned above. Further, if parking position is engaged with vehicle moving, the mechanism shall ratchet or not engage until a low vehicle speed (0-8 kmph) is attained.

9 NEUTRAL SAFETY SWITCH

9.1 Switch in series with the starter circuit is recommended to prevent starting of the engine in any driving position This switch shall allow the engine to be started only in the N and P (if P is included) positions.

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